

**LOW TEMPERATURE NITROCARBURIZING SALT
AND METHOD OF USE**

ABSTRACT OF THE DISCLOSURE

5 A composition for nitrocarburizing stainless steel parts and a method for producing a
nitride or hard case on such parts using the composition, are provided. The composition
includes alkali metal cyanate and alkali metal carbonate, wherein the cyanate ion is present
in a weight percentage of greater than 45% and less than 55.2%. The composition is fused
and maintained between about 750°F and about 950°F depending upon the type of stainless
steel to be treated. The workpiece is immersed in the fused bath and left in until a
satisfactory compound layer or case is formed. With austenitic stainless steel, the piece is
immersed from about four hours to about six hours at temperatures between about 750°F
and about 950°F, preferably between 750°F and 850°F to maintain corrosion resistance.

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With 400 series stainless steel, increased corrosion resistance is achieved by
immersion for between four and six hours at 950°F.